Fish and Wildlife Special Purpose Account

Annual Report 2014-15

Ontario

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Introduction

The Ministry of Natural Resources and Forestry (MNRF) is responsible for fish and wildlife management in Ontario. This includes policy, planning and program development and delivery to sustain healthy fish and wildlife populations. In 1995 the MNRF established a separate account to serve as the financial mechanism to dedicate fish and wildlife revenue to fish and wildlife management. All licence fees, fines and royalties collected under the *Fish and Wildlife Conservation Act* (FWCA) flow into the Fish and Wildlife Special Purpose Account (FW SPA) and are applied to fish and wildlife management programs, such as monitoring populations and enforcing regulations.

Pursuant to section 85(4) of the FWCA, the Minister of Natural Resources and Forestry is required to ensure that a report is prepared annually on the financial affairs of the FW SPA. This annual report of the 2014-15 fiscal year provides an overview of the financial details and associated achievements delivered through the FW SPA.

Fish and Wildlife Heritage Commission

The Fish and Wildlife Heritage Commission (FWHC), established under the provisions of the *Heritage Hunting and Fishing Act*, provides recommendations on matters referred to it by the Minister. The FWHC has a membership of eleven, including the commission chair, who represent a cross-section of key interests in the sustainable use of our fish and wildlife resources. During the 2014-15 fiscal year, the Minister had nine members and a chair appointed to the Commission. The FWHC was active during this period and reviewed materials and/or provided input on a variety of issues including:

- Bait Policy Review
- Black Bear Management Pilot Program
- Enhancement of the FW SPA
- Sustainability Strategy for the FW SPA
- Fisheries Broadscale Monitoring
- Fishing and hunting licence issuer commissions
- Hunter Education Program
- Licensing Automation Service renewal
- Moose management
- Proposed *Invasive Species Act*
- Provincial Fish Strategy
- Wild Turkey management

Not all briefings and consultations led to specific recommendations for the Minister but in many cases the consultations helped to frame the program or policy.

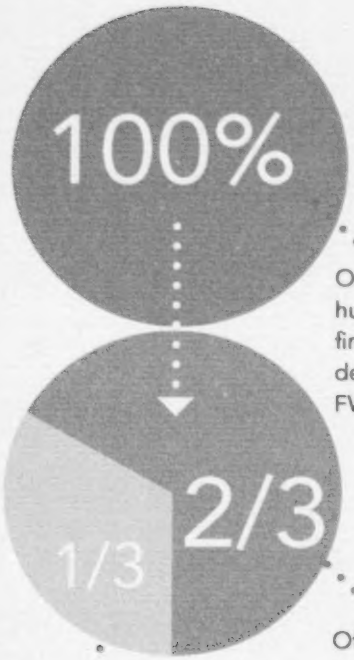
The FWHC members are appointed by Order-in-Council. The membership for 2014-15 was as follows:

Position	Member Name	Location
Chair	Brooke, Thomas (Tom)	Campbellford
Member	Morin, Conrad R.	Hearst
Member	Reid, Kathleen	Norwood
Member	Williamson, John C.	Inverary
Member	Dickinson, Leonard	Ferguson Falls
Member	Richer, Gerald	Aylmer
Member	Tufts, Bruce	Elginburg
Member	Wheeler, Shannon	Bradford
Member	Mitchell, Gordon	Field
Member	Rivard, Deborah (Debbie)	Thunder Bay

Fish and Wildlife Program at a Glance

$69.8 million

In 2014-15, the FW SPA contributed $69.8M to fish and wildlife management in Ontario



Of all fishing and hunting licence fees, fines and royalties are deposited in the FW SPA

Of fish and wildlife management is funded from the FW SPA

Is funded by other Ontario Government funds

1.2 million

Licenced anglers enjoy Ontario's recreational fisheries annually

2 million

Over 2 million Outdoors Cards and fishing and hunting licences sold annually

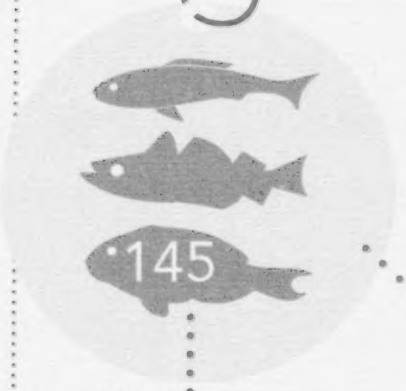
$60 million

Average annual revenue from fishing and hunting licences

$2.5 billion

Recreational fishing contributes almost $2.5B to the Ontario economy

Lakes in Ontario



Fish species in Ontario

$230 million

The commercial fishery contributes $230M to the economy

$371 million

Ontario residents spend $371M on hunting activities

84.3 million

Hectares of Crown Land in Ontario

Fish and Wildlife Program Expenditures

Fish and Wildlife Program expenditures are funded through a combination of FW SPA and general revenues through the Consolidated Revenue Fund (CRF). Capital expenditures to support the program (i.e. vessels, vehicles, fish culture stations etc.) are funded solely through the CRF.

Operating expenditures for the Fish and Wildlife Program, including enforcement, amounted to $109.0 million in fiscal year 2014-15. Approximately 64% of these expenditures ($69.8 million) were funded by the FW SPA. The remaining $39.2 million in program expenditures were funded by the CRF. Over the last 10 years the Fish and Wildlife Program expenses have increased while the FW SPA portion of fish and wildlife management activities has remained relatively consistent. The following table summarizes the FW SPA and CRF contributions since 2005-06.

Fiscal Year	2005-06	2006-07	2007-08	2008-09	2009-10	2010-11	2011-12	2012-13	2013-14	2014-15
FW SPA Expenditures	$ 58.3	$ 58.7	$ 60.5	$ 61.6	$ 64.2	$ 64.5	$ 67.6	$ 68.6	$ 65.8	$ 69.8
FW CRF Expenditures	$ 15.4	$ 12.3	$ 19.6	$ 34.2	$ 34.8	$ 44.0	$ 38.4	$ 43.7*	$ 46.7*	$ 39.2
Total Expenditures	$ 73.7	$ 71.0	$ 80.1	$ 95.8	$ 99.0	$108.5	$106.0	$112.3	$112.5	$109.0

* Compared to the 2013-14 Annual Report, CRF expenditures for 2012-13 and 2013-14 have been restated to properly reflect fish and wildlife Conservation Officer and Enforcement expenditures

FW SPA Revenues and Expenditures

The *Fish and Wildlife Conservation Act* (FWCA) requires that revenues collected under that Act flow into the FW SPA. This includes all licence fees, royalties and fines paid under the FWCA and its regulations. Money held in this account may only be spent on:

- the conservation or management of wildlife or fish populations or the ecosystems of which those populations are a part;
- matters related to the activities of people as they interact with or affect wildlife or fish populations, including any matter related to safety; or,
- a refund of all or part of a fee or royalty.

Annual recoveries from the FW SPA are planned based on a 3-year rolling average of expected revenues, due to significant annual fluctuations resulting from the Outdoors Card 3-year purchasing cycle. Treasury Board approves the FW SPA recovery level as part of the Ministry's annual budget submission.

TABLE 1: Summary of Revenues, Recoveries and Year-end Account Balances ($ in millions)

Item	2012-13 Actual	2013-14 Actual	2014-15 Plan	2014-15 Actual	2014-15 Variance	2015-16 Plan
Opening Balance	$21.1	$12.5	$19.5	$19.5	$0.00	$19.2
Revenues	$60.0	$72.8	$64.4	$69.5	$5.1	$65.4
Recoveries	($68.6)	($65.8)	($72.4)	($69.8)	$2.6	($71.3)
Year End FW SPA Balance	$12.5	$19.5	$11.5	$19.2	$7.7	$13.3

In 2014-15 revenue was higher than planned which may be due to changing licence renewal patterns that may cross fiscal years.

TABLE 2: FW SPA Revenues for the last 3 Fiscal Years **($ in millions)**

Source of Revenue	2012-13	2013-14	2014-15
Ontario Resident Angling and Hunting Licences and Permits	$ 36.2939	$ 49.0927	$ 44.6589
Non-Resident Angling and Hunting Licences and Permits	$ 19.5315	$ 19.0010	$ 19.4191
Commercial Fish Licences and Royalties	$ 1.0267	$ 1.1965	$ 1.1394
Bait Fish Licences	$ 0.2978	$ 0.2849	$ 0.2963
Fur Licences and Royalties	$ 1.1789	$ 1.2184	$ 1.0945
Fines and Penalties	$ 0.6445	$ 0.7040	$ 0.5643
Interest	$ 0.3366	$ 0.2669	$ 0.2998
Service Fee Revenue	$ 0.0000	$ 0.0000	$ 0.6817
Other Revenue	$ 0.6511	$ 0.9920	$ 1.3533
Total Revenue	$ 59.9610	$ 72.7564	$ 69.5073

TABLE 3: 2014-15 Details of Expenses **($ in millions)**

Item	Expenditures
Planning, Policy and Regulatory	$ 18.7627
Species and Ecosystem Science	$ 14.9188
Conservation Officers and Enforcement	$ 13.4874
Population Health Rehabilitation and Enhancement	$ 10.1827
Outdoors Cards and Licensing	$ 9.5534
Safety, Education and Promotion	$ 2.8760
Total	$ 69.7810

TABLE 4: 2015-16 Planned Expenditures by Service **($ in millions)**

Service	Planned Expenditures
Planning, Policy and Regulatory	$ 18.0632
Species and Ecosystem Science	$ 14.7262
Conservation Officers and Enforcement	$ 13.4083
Population Health Rehabilitation and Enhancement	$ 10.0155
Outdoors Cards and Licensing	$ 9.3764
Safety, Education and Promotion	$ 5.6704
Total	$ 71.2600

Services Funded by the FW SPA

The MNRF supports the management of fish and wildlife populations in many ways, including the following highlights:

Conservation Officers and Enforcement

Conservation Officers provide regulatory enforcement for the protection of Ontario's natural resources and public safety. This includes specialized units and services to support field enforcement, including a canine program, undercover and special investigations, and mobile offices in Conservation Officer vehicles. Officers conduct public outreach and education to increase awareness and knowledge and promote compliance with Ontario's *Fish and Wildlife Conservation Act*.

Expenditures funded through the FW SPA include officers' salaries and benefits, operational costs such as fuel, travel and patrol expenses, uniforms, forensics and intelligence. Information technology costs such as specialized enforcement software, mobile offices and staff safety watch and radio monitoring services are also included.

2014-15 EXPENDITURES ($ in millions)	
Salaries & Benefits	$ 9.4
Field Operations	$ 3.0
IT & Communications	$ 0.7
Safety Watch	$ 0.4
TOTAL	$ 13.5

77% enforcement field activity is directed at fish and wildlife enforcement

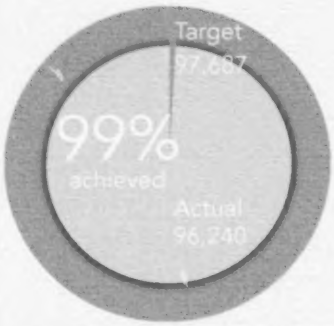
43% is funded by the FW SPA

176,000 Conservation Officer contacts

5,600 Warnings

4,100 Charges

CONSERVATION OFFICERS & ENFORCEMENT PERFORMANCE MEASURES



Fish and Wildlife Enforcement hours

Public Outreach hours

Outdoors Cards and Licensing

Outdoors Cards and Licensing includes the issuance of sport fishing and hunting licences, and the administration of big game draws and public support through the Outdoors Card Centre and the Natural Resources Information Centre.

FW SPA expenditures are related to licensing and draws and contact centre support. This includes staff costs, production of Outdoors Cards, licences, seals and tags, postage, the Licensing Automation Service, and fees paid to private licence issuers to sell Outdoors Cards and licences.

2014-15 EXPENDITURES ($ in millions)	
Licensing Application System	$ 4.8
Outside Issuer Costs	$ 1.5
Contact Centres	$ 1.4
Licensing and Client Services	$ 1.2
Outdoors Card Production	$ 0.7
TOTAL	$ 9.6

TOTAL CARDHOLDERS

900,000 Resident fishing cardholders

420,000 Resident hunting cardholders

550,000 Cdn. & non-resident fishing cardholders

33,000 Non-resident hunting cardholders

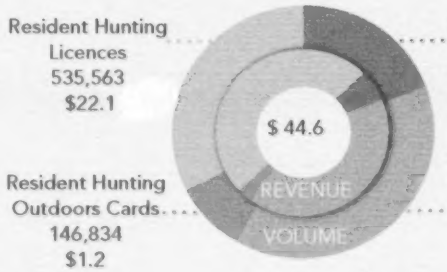
LICENCES and OUTDOORS CARDS ISSUED IN 2014-15

1,022,307 Fishing licences issued

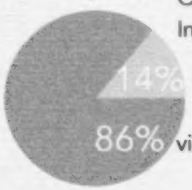
557,874 Hunting licences issued

635,196 Outdoors Cards issued

2014-15 ONTARIO RESIDENT ANGLING AND HUNTING LICENCE SALES – VOLUME/REVENUE ($ in Millions)



201,197 inquiries received through the Outdoors Card and Natural Resources Information Centres



14% via email

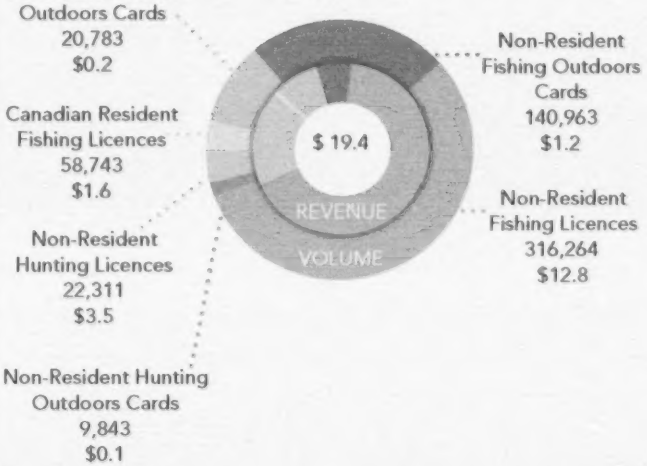
86% via phone

254,073 Big game draw applications processed

24% in person

76% electronically (phone and internet)

2014-15 CANADIAN AND NON-RESIDENT ANGLING AND HUNTING LICENCE SALES – VOLUME/REVENUE ($ in Millions)



Safety, Education and Promotion

Safety, Education and Promotion increases public awareness of the social, economic, health and lifestyle benefits of fishing and hunting activities to build a strong recreational fishing and hunting heritage. It is also to increase awareness of the threat of invasive species and encourage positive actions by the public to prevent, detect, respond, manage and adapt to invasive species.

FW SPA expenditures include the Kids' Fish Art Program, the Hunter Education Program, the Learn to Fish program, public outreach and education at community events. Responding to fish die-off events, conducting site visits to inspect crop damage to make recommendations to prevent further damage, and promoting compliance with the *Fish and Wildlife Conservation Act* are also included.

2014-15 EXPENDITURES ($ in millions)	
Marketing and Operating Costs	$ 0.8
Hunter Education	$ 0.6
Wildlife Compliance Promotion & Incident Management	$ 0.5
Wildlife Education/Communication	$ 0.4
Prevention and Management of Human/Wildlife Conflict	$ 0.3
Fisheries Local Incident Management	$ 0.2
Public Outreach	$ 0.1
TOTAL	$ 2.9

MNRF show exhibit

24,695 Number of students that completed Hunter Education in 2014

4,243 Adults and children that participated in Learn to Fish

273 Learn to Fish 2 hour sessions delivered at 6 provincial parks

Members of the public toured the Ontario Explorer vessel and learned about Great Lakes fisheries management

154,000 Fish ON-Line website hits

13,000 Number of lakes Fish ON-Line provides information on

424 Entries in Kids' Fish Art Contest

Species and Ecosystem Science

Species and Ecosystem Science includes monitoring and research programs to better understand the state of resources to guide management decisions.

FW SPA expenditures support analysis of hunter and angler surveys, moose aerial inventory surveys, broadscale and inland lake monitoring. State of the Resource reports are published to describe the condition, threats, trends and management response associated with specific issues, geographic areas, species, or habitats.

2014-15 EXPENDITURES ($ in millions)	
Fisheries Management Research and Monitoring	$ 7.2
Game Wildlife Research	$ 3.2
Great Lakes Fisheries Population and Habitat Monitoring	$ 1.9
Game Wildlife Population and Habitat Monitoring	$ 0.9
Commercial Fisheries Management	$ 0.7
Moose Aerial Inventory	$ 0.7
Hunter Surveys	$ 0.3
TOTAL	$14.9

17,520 Commercial fish Daily Catch Records validated

580 e-DNA samples taken for Asian carp surveillance throughout the Lake Erie Watershed

21,000 Over 21,000 fish sampled to assess age, weight, health conditions

200 Ontario lakes surveyed through angler surveys, water quality testing, netting surveys and invasive species surveillance to gather information and help manage fish populations

Surveys mailed to hunters for completion and submission to MNRF for compilation.

75,899 moose
17,482 bear
3,898 wolf/coyote
103,125 deer

88% of the Wildlife Management Units where moose are hunted had an aerial survey conducted between 2013 and 2015

25 Moose aerial inventories were conducted

Implanting acoustic tags in Walleye on the Grand River

Lake Erie young of the year fish assessment

Population Health, Rehabilitation and Enhancement

Population Health, Rehabilitation and Enhancement protects the sustainability of native fish and wildlife populations. MNRF sets targets for fish produced for stocking including those for community hatchery programs; however, actual numbers depend on the availability and quality of fertilized eggs collected.

FW SPA expenditures support data collection (inventory, monitoring), information management, analysis and assessment of data, and reporting.

Expenditures also include invasive species monitoring, wild fur management including issuance of trapping licences, setting quotas and monitoring harvest, and fish and wildlife disease monitoring.

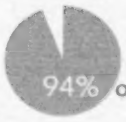
FW SPA expenditures contribute to the operation of the Canadian Wildlife Health Cooperative (CWHC), a cooperative of provincial/territorial, federal and private agencies that provides access to specialized wildlife health expertise and services such as disease diagnoses, veterinary lab capacity, and research and academic collaboration that benefits the public, government/non-government agencies and the private sector.

Nine provincial fish culture stations produce and stock fish into public waters to rehabilitate degraded fish stocks and to create, maintain and enhance angling opportunities.

2014-15 EXPENDITURES ($ in millions)	
Fish Culture	$ 5.7
Fish and Wildlife Ecosystem Maintenance and Reporting	$ 3.2
Fish and Wildlife Disease Monitoring	$ 0.5
Wild Fur Management	$ 0.5
Invasive Species Management/Control	$ 0.3
TOTAL	$10.2

200 Metric tons of fish stocked in **1,200** waterbodies annually

7.73 million Fish produced for stocking into Great Lakes and inland lakes



of target

1.52 million Fertilized fish eggs or fry provided to Community Hatchery Program partners for eventual stocking into public waters

104% of target

.72 million surplus fertilized fish eggs or fry provided to academic institutions and government agencies to support research

.32 million surplus fertilized fish eggs or fry sold to commercial interests to support industry

50 Sites were sampled in each of Thunder Bay and Sault Ste. Marie as part of binational aquatic invasive species survey. No new occurrences of invasive species were detected.

Over 460 deer and elk tested for Chronic Wasting Disease

100% Of results have been negative to date

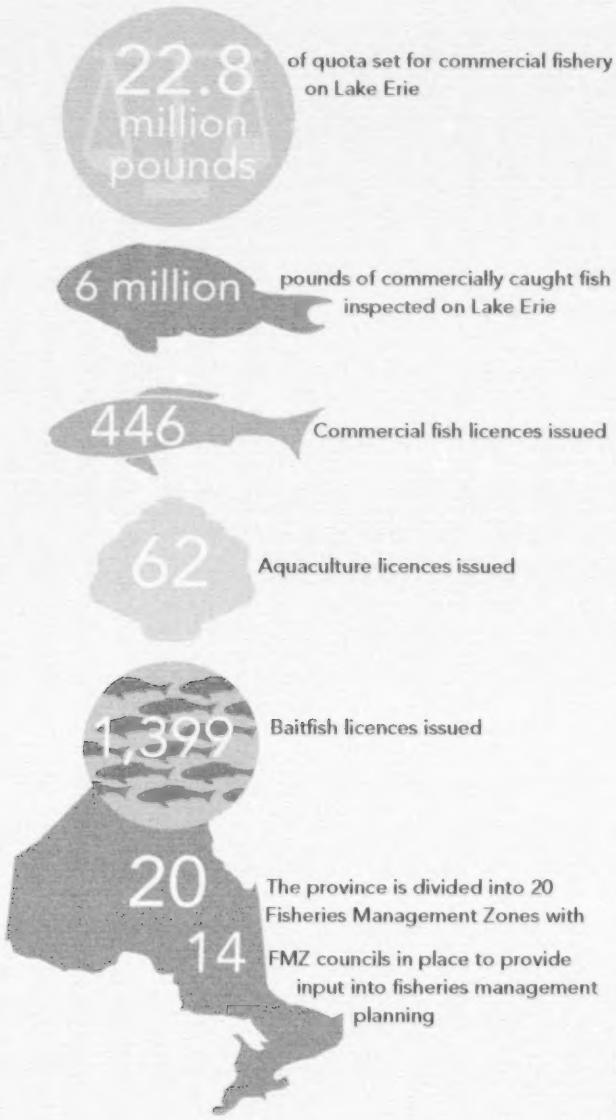
Loading incubators with fertilized eggs

Planning, Policy and Regulatory Services

Planning, Policy and Regulatory Services includes development and implementation of resource management plans, policies, legislation, programs and standards related to recreational and commercial fisheries management and wildlife management in Ontario. Regulations and policies outline where, when and how fishing and hunting is conducted in the province.

FW SPA expenditures support staff costs to deliver fish and wildlife management activities including the review and allocation of aquaculture and baitfish licences, commercial fishing regulatory compliance, public planning and engagement opportunities such as Fisheries Management Zone Advisory Councils, public planning and engagement activities and resource development on Crown land authorizations. Information technology costs for tools such as Fish ON-Line, the fish stocking database and the moose harvest allocation system are also included.

2014-15 EXPENDITURES ($ in millions)	
Fish and Wildlife Legislation, Regulation and Policy Development	$ 8.2
Fisheries Management Plans and Allocations	$ 2.6
Fisheries Management Large Vessel Program	$ 2.4
Wildlife Habitat & Population Planning & Authorizations	$ 2.1
Fish and Wildlife Information and Information Technology	$ 0.9
Commercial Fisheries Management (Regulatory)	$ 0.7
Recreational Fisheries Management	$ 0.6
Fish Habitat Management	$ 0.5
Baitfish Management	$ 0.4
Aquaculture Management	$ 0.2
Provincial Committee and Zone Council Support	$ 0.2
TOTAL	$18.8


22.8 million pounds
of quota set for commercial fishery on Lake Erie
6 million
pounds of commercially caught fish inspected on Lake Erie
446
Commercial fish licences issued
62
Aquaculture licences issued
1,399
Baitfish licences issued
20
The province is divided into 20 Fisheries Management Zones with
14
FMZ councils in place to provide input into fisheries management planning

Legislation Regulation & Policy Development

- Posted the draft Provincial Fish Strategy for public comment and revised it based on public consultation;
- drafted Bill 37, the proposed *Invasive Species Act*, 2014 and re-introduced it in the Legislature in November 2014;
- entered into a Mutual Aid Agreement with the eight Great Lake States and Quebec to share resources in the event of a detection of an invasive species that exceeds the capacity of any one jurisdiction to respond on their own;
- led the development of Ontario Moose Tourism Industry Information Management system to support moose allocation decisions to the tourism sector;
- continued the Provincial Bait policy review;
- continued work on commercial fish policy development including bycatch;
- modernized ice hut registration by implementing online ice hut registration in Ontario;
- modernized approval process by harmonizing aquaculture-related licence terms and allowing persons to operate public educational aquariums without an aquaculture licence provided they follow rules in regulation;
- completed the Collaborative Sediment Policy process resulting in the finalization of the sediment quality monitoring licence conditions for cage aquaculture;
- drafted application Guidelines for Cage Aquaculture Facilities for future consultation;
- conducted outreach as part of Ontario's Moose Project, exploring ways to reduce the pressure on moose to help sustain and grow Ontario's moose population.

STRATEGIC PARTNERSHIPS & BUSINESS AGREEMENTS

Ontario Fur Managers Federation
Grand Council Treaty #3
Trapper education and administration of trapper licensing
Union of Ontario Indians
Nishnawbe Aski Nation

PARTICIPATED IN AND SUPPORTED COMMITTEES SUCH AS:

- local Fisheries Management Zone Advisory Councils
- local citizens committees
- Big Game Management Advisory Committee
- Ontario Moose-Bear Allocation Advisory Committee
- Fish & Wildlife Heritage Commission
- Human-Wildlife Conflict Advisory Group and Steering Committee
- Canadian Wildlife Directors Committee
- International Hunter Education Association Canada
- Agricultural-Wildlife Conflict Working Group
- The Animal Welfare Task Force
- Asian Carp Regional Coordinating Committee
- Bait Review Advisory Group

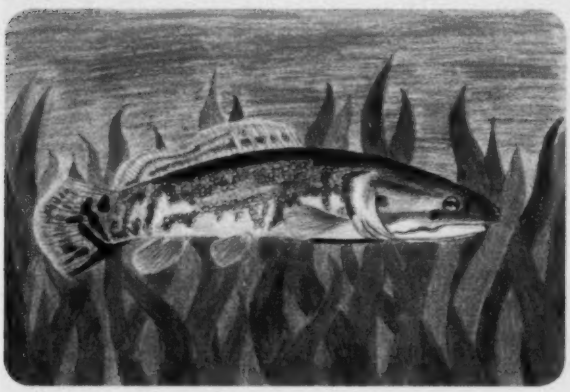
Initiatives in the Spotlight

Each year the MNRF manages fish and wildlife populations and their habitats for long-term sustainability, undertakes recovery actions for species at risk, and improves recreational opportunities for angling, hunting and trapping. The following achievements section provides detailed examples of a few initiatives undertaken by the Ministry in 2014-15.

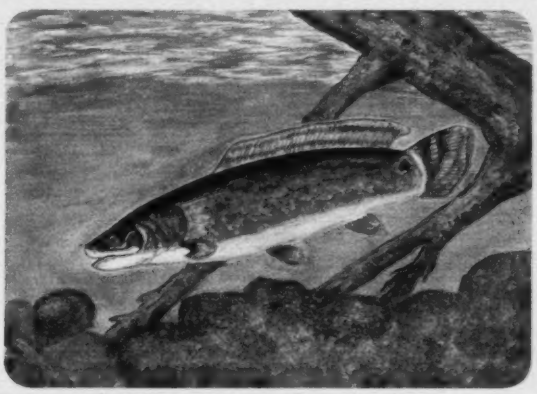
Kids' Fish Art Contest

The 12th annual Kids' Fish Art Contest, a collaboration with the MNRF and corporate partners, looks for winning artwork from Ontario students from grades 4 to 12. The purpose of the contest is to educate elementary school age children on conservation and sustainability and introduce them to angling as a pastime. In 2014, students were to provide a drawing of either a Splake or Bowfin and a one-page essay depicting the species' habitat and how to protect it for future generations. The 12th annual Kid's Fish Art Contest Winners for 2014 were:

Charisse Fung – "Pursuit"
Grade 10 to 12 Winner and Overall Winner



Olivia Symons – "Bowfin Fish"
Grade 7 to 9 Winner



Aaminah Kidwai – "Camouflage Bowfin"
Grade 4 to 6 Winner

Learn to fish

Learn to Fish 2014

The Learn to Fish program aims to get Ontarians hooked on fishing and inspire new generations of anglers.

Learn to Fish offers free two-hour fishing lessons, with all equipment provided, including a one-day licence. After an interactive hour of dryland training, participants head to the water to make their first cast, with the encouragement and support of top-notch instructors.

The Learn to Fish program is delivered mid June to Labour Day in six provincial parks: Six Mile Lake, Grundy Lake, Sibbald Point, Darlington, Emily and Earl Rowe. *In 2014, more than 4,000 people took to the water with Learn to Fish staff.*

Learn to Fish 2015

In 2015, Learn to Fish will continue to run regular sessions at six provincial parks.

Learn to Fish also unveils its new mobile unit. After making a splash at the winter tradeshows, the truck and trailer is fueled up for a jam-packed summer schedule.

Between April and September, the mobile unit will attend 50-75 events across Ontario, including the Pan Am Games Celebration Zone, Carassauga and HarbourfrontKIDS.

The mobile unit includes video monitors, a fishing simulator, and a make-your-own fishing lure station. Future plans include the installation of equipment to facilitate the *mobile sale of fishing licences.*

In 2015, Learn to Fish will also launch a *new educational pilot program.* Several grade 5 and 6 classes within Peterborough school boards will be attending Emily Provincial Park for an outdoors-themed field trip, featuring a full Learn to Fish session, as well as content from the Natural Heritage Program, Ontario Parks/Learn to Camp, and the mobile outreach trailer.

(Top) Learn to Fish instructor and participants

(Bottom) Learn to Fish truck and trailer

Fish ON-Line

In 2011, the MNRF released Fish ON-Line – a web-based, interactive mapping tool to promote recreational fishing in the province. Fish ON-Line provides information on over 13,000 lakes across Ontario. Since its launch, the tool has been broadly acclaimed by the angling public. MNRF has continued to improve/enhance the tool to reflect feedback from the public.

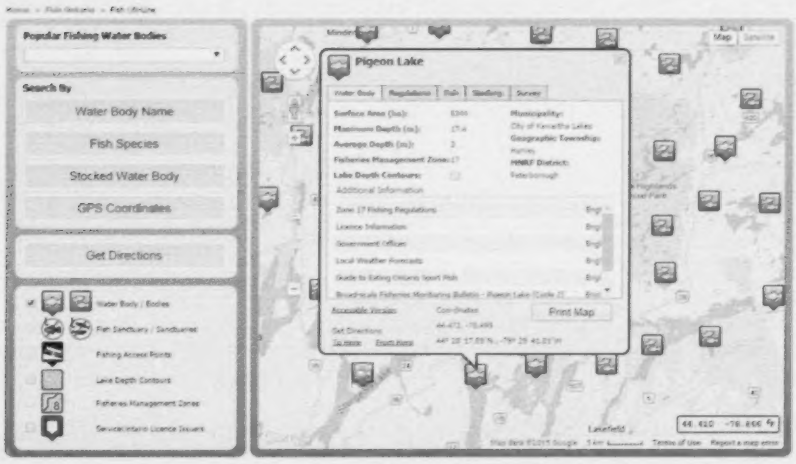
The tool now provides the following information:

- what species of fish are available;
- directions to Ontario's lakes and waterways from anywhere in North America;
- where the province is stocking sport fish;
- depth contours;
- ServiceOntario locations where fishing licences are sold;
- over 2,000 fishing access points such as boat launches and shoreline fishing opportunities;
- broadscale monitoring bulletins from cycle 1 and cycle 2;
- zone-wide and waterbody specific regulations; and,
- links to additional information including fish species fact sheets, Ontario Parks, the Guide to Eating Ontario Fish, local weather forecasts, and Ontario Federation of Anglers and Hunters TackleShare program.

Fish ON-Line has received both provincial and national media coverage by appearing in more than 40 radio broadcasts, newspapers and electronic media outlets. It has been promoted at the Toronto Sportsmen's Show, Timmins Sportsmen's Show and Thunder Bay Fishing and Hunting Show. In 2014-15, Fish ON-Line received over 154,000 website hits, an 18% increase from the previous year; it is one of the most visited MNRF pages on the Ontario.ca website.

Fish ON-Line has provided the people of Ontario open access to government information that has not been traditionally easy to obtain, encouraging anglers to seek out and try new fishing locations.

In 2012, a mobile version of Fish ON-Line was released for iOS, BlackBerry and Android devices. It contains most of the functionality of the desktop version and was one of the first mobile friendly applications in the Ontario government.



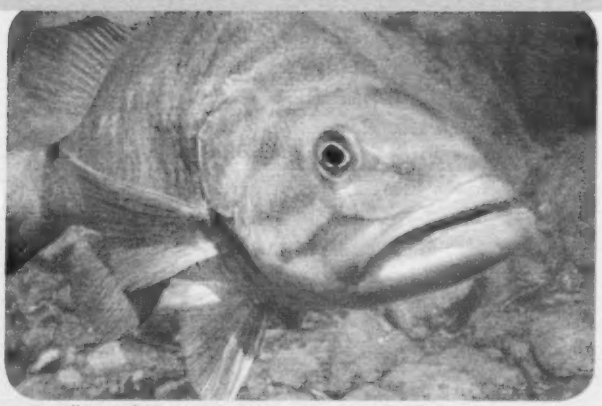
Lake Opeongo's Long-term Study of Smallmouth Bass

Smallmouth Bass are spawning earlier in the spring than ever before. That's what the Lake Opeongo long-term Smallmouth Bass monitoring project has discovered. Based at the Harkness Laboratory of Fisheries Research in Algonquin Park, this project has provided direct evidence of climate warming. It shows the effect of climate warming on the timing of spawning of an important game fish and what this means for bass spawning seasons.

Opening and closing dates for fishing seasons are set by the MNRF with adult spawning fish in mind. The dates are set to allow time for adult fish to move from spawning and nursery areas where they are most vulnerable. In the past, the opening date for Smallmouth and Largemouth Bass fishing season was the last Saturday in June for many areas in south-central Ontario.

For the past 50 years staff from the MNRF Harkness facility have recorded when Smallmouth Bass arrive and depart from spawning areas on Lake Opeongo. They have observed that ice-out day and the average spawning day for Smallmouth Bass in Lake Opeongo has advanced at approximately two days per decade. This translates into a spawning season that is 10 days earlier than before. Earlier spawning means a shift in protection. Both ice-out day and the median spawning day for Smallmouth Bass in Lake Opeongo are very close in their trend lines.

Based on results of the Lake Opeongo bass study observations and temperature records that show warming patterns, the MNRF has changed the bass season in several fishery management zones in southern Ontario to the third Saturday in June. Some species like Smallmouth Bass are responding to the new conditions in ways that increase their population growth. For keen bass anglers in southern Ontario, this change has provided more angling opportunities.



Smallmouth Bass protecting its nest on Lake Opeongo

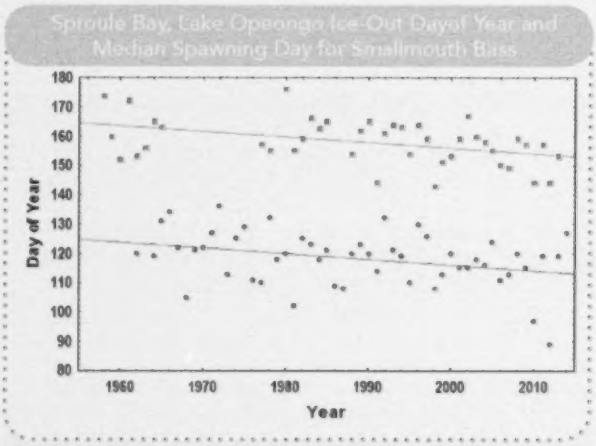
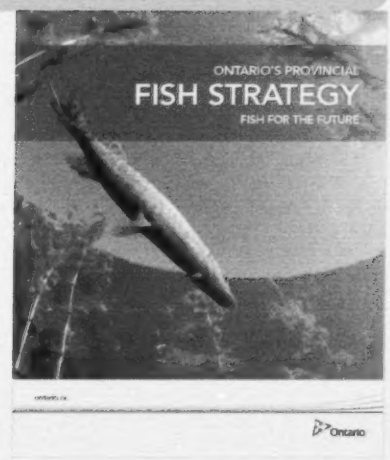


FIGURE 1. A comparison of ice-out day in spring (blue circles) for Sproule Bay, Lake Opeongo and the median spring spawning day (red squares) for smallmouth bass in Lake Opeongo. Slopes of the trend line for ice-out (= -0.195; years 1962–2014) and median bass spawning day (= -0.192; 1958–2013; some years with no field observations) are negative indicating a trend for earlier ice-out and spawning for bass. The trend lines for both are very close and indicate that ice-out and spring spawning for bass are advancing by approximately two days per decade.

Ontario's Provincial Fish Strategy – Fish for the Future



In the spring of 2015, MNRF launched Ontario's Provincial Fish Strategy – Fish for the Future. This is a guiding document for managing fisheries resources in Ontario. It identifies provincial fisheries goals, objectives and tactics to achieve them.

The main purposes of the strategy are to:

- improve the conservation and management of Ontario's fisheries resources; and,
- promote, facilitate and encourage fishing as an activity that contributes to the nutritional needs, and the social, cultural and economic well-being of individuals and communities in Ontario.

The Provincial Fish Strategy provides management direction to MNRF staff and will better position the ministry to respond to evolving environmental, economic, social, technological and policy challenges facing fisheries in Ontario.

The strategy was developed to provide up-to-date direction for the management of Ontario's fish, fisheries and supporting ecosystems. It was developed based on extensive internal input and engagement of Aboriginal communities, agency partners and key stakeholders. The strategy consolidates strategic direction from multiple sources including *Our Sustainable Future: A Renewed Call to Action; Biodiversity: It's in our Nature; MNR's Statement of Environmental Values* and the *Joint Strategic Plan for Management of Great Lakes Fisheries*, and clearly documents the desired future state of our fisheries resources, the role of MNRF in achieving our desired outcomes, and our dependency on partners. The Provincial Fish Strategy is intended to be a guidance document for staff, partners and informed stakeholders, and as such is written at a technical level.

The strategy will:

- inform MNRF's fish policy development, planning and decision making;
- prioritize MNRF efforts and coordinate activities;
- communicate MNRF's fisheries priorities to others;
- provide input to other natural resource management initiatives; and,
- provide guidance to other levels of government and partners related to their own activities, where appropriate.

Implementation of the strategy will build on the ongoing transition to a landscape, risk-based and adaptive management approach to the management of Ontario's fisheries resources, which was initiated in 2008 with the Ecological Framework for Fisheries Management, and has continued with our transformation initiative.

(Left) Commercial fisherman with Lake Trout
(Right) Father and son fishing

Provincial Bait Review

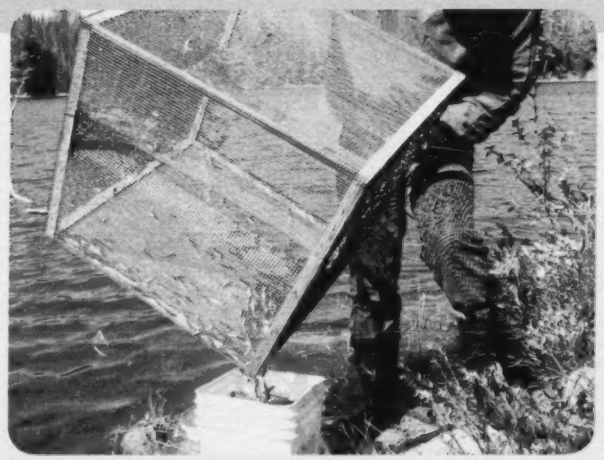
MNRF is undertaking a comprehensive review of current and potential Provincial Bait Policies. The purpose of the review is to determine how the ecological risks associated with the movement and use of bait (i.e., baitfish and leeches) can be minimized to help maintain healthy fisheries and aquatic ecosystems, while reducing the complexity of current management regimes and ensuring a sustainable bait industry.

The harvest and use of live bait in Ontario has been an important aspect of recreational fishing for nearly a century. However, the movement of live bait also involves ecological risks related to the spread of diseases and invasive species that pose risks to Ontario's fisheries, provincial parks and conservation reserves, and biodiversity. Over the past decade, MNRF has worked to manage the spread of new threats (e.g., Viral Hemorrhagic Septicemia), leading to a very complex regulatory regime that requires intensive management and has created business uncertainty for the bait industry.

This Provincial Bait Policy Review will address topic areas including: 1) Angler Use and Movement; 2) Parks and Protected Areas; 3) Commercial Sale and Transport; 4) Allocation; and 5) Reporting.

The following four goals have been established to guide the development of policy options to reduce ecological risks while ensuring a balanced approach:

1) Bait is managed to protect the health of aquatic ecosystems.
2) Sustainable use of bait resources enhances the quality of life for Ontarians by providing recreational, social and economic benefits.
3) Bait is managed to conserve the resource and maintain a viable bait industry.
4) Bait management is adaptable, effective, consistent across the province and simple to implement.



Baitfish harvest

MNRF is actively engaging and consulting with stakeholders in the review process, including the establishment of a Bait Review Advisory Group (BRAG) comprised of 13 provincial stakeholders with an interest in bait management to provide advice and perspectives on policy options for future consideration.

Great Lakes Fisheries

The Great Lakes support world class fisheries for a variety of species. The FW SPA helps fund fish stocking, monitoring and assessment, enforcement and management planning in Lake Ontario, Lake Erie, Lake Superior and Lake Huron.

Lake Ontario

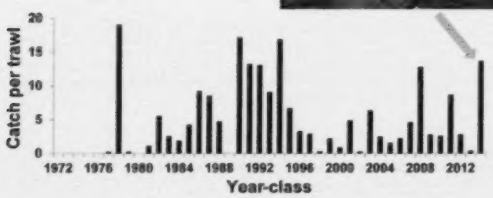
The FW SPA supports world class Lake Ontario trout and salmon fisheries with more than 2.3 million fish stocked annually including Chinook and Coho Salmon, Rainbow Trout, Brown Trout, Lake Tout and Atlantic Salmon. A new Hamilton Harbour initiative to restore Walleye, funded in part by the FW SPA, started in 2012 and provided a local ice fishery by January 2015.

The first ever lake-wide tributary angler creel survey was initiated in 2014 which included ten tributaries from Bronte Creek to Shelter Valley Creek. The results of the survey will provide a lake-wide perspective on the social, economic and ecological importance of migratory stream fisheries.

The Bay of Quinte continues to provide world class angling for trophy Walleye. Regular monitoring, funded by the FW SPA, showed that 2014 produced the strongest year class of Walleye since 1994. The future of this important fishery looks promising.

Bay of Quinte Walleye Population

- 2014 produced largest year-class in two decades
- Recruitment levels indicate continued stable population



(Top) Lake Ontario Lake Trout caught by Aaron Shirley. (Centre) Hamilton Harbour Walleye ice fishing January 2015. (Bottom) MNRF staff interviewed more than 1,800 anglers in 2014.

The FW SPA supports the management of one of the world's largest freshwater fisheries, with 23 million pounds of fresh fish harvested from the waters of Lake Erie in 2014. The commercial fishing industry on Lake Erie generates $136 million in direct revenue (approximately $26 million landed value and $110 million in processing). This creates over 900 jobs, which in return makes a significant contribution to the well being of the portside communities of Port Colborne, Port Dover, Port Stanley, Erieau, Wheatley, Leamington and Kingsville. Fisheries management programs are carried out throughout the lake three seasons per year, and include a variety of techniques to monitor everything from plankton up to 100 plus kilogram Sturgeon.

Commercial Fish Business Relationship

To ensure the sustainability of the commercial fishing industry on Lake Erie, the FW SPA supports a key partnership with Ontario Commercial Fisheries Association (OCFA), through the Ontario Commercial Fish Business Relationship (CFBR). Under this agreement, the OCFA collects and enters over 17,000 Daily Catch Reports (DCRs) annually from around the province. DCRs are an invaluable source of commercial harvest and effort data and are key data used to model Walleye and Yellow Perch populations on Lake Erie. DCRs also allow MNRF to monitor quota, and harvest by grid. In 2014, DCR harvest data was used by the OCFA to collect and submit $1.1 million in royalty back into the FW SPA.

Ontario Fall Index Program

As part of the CFBR, the OCFA with the guidance from Ministry staff implemented an annual fall index program. In 2014, seven commercial vessels and crews were hired to fish 157 sites across the Ontario waters of Lake Erie. Over 40,000 fish were caught representing 25 different species. An OCFA lab crew processed length and weight data from over 12,000 fish and collected 4,700 otoliths (fish ear bones) and 6,600 scales for fish aging. This 25 year data set is the most significant fisheries independent time series used in our catch-at-age population models. These models are used to estimate Walleye and Yellow Perch abundance and annual Total Allowable Catch process within the Lake Erie Committee.

Ontario Port Officer Program

Funding by the FW SPA also contributes to a sustainable commercial fishery on Lake Erie by supporting the Lake Erie Port Officer Program. Three seasonal Port Officers are stationed in Wheatley and Port Dover. Port Officers work in conjunction with our Southern Marine Enforcement Unit, monitoring the commercial harvest at all major fishing ports. Our Port Officers ensure that fisher-declared weights are accurately recorded on all DCRs. In 2014 MNRF Port Officers observed 65% or 6.8 thousand DCRs completed by Lake Erie commercial fishers.

(Left) Typical fishing vessel on Lake Erie
(Centre) Fishers unloading a catch of Lake Whitefish and Walleye
(Right) Fish weights being verified by a port officer

Advisory Council for Lake Superior Fisheries Management Zone (FMZ) 9

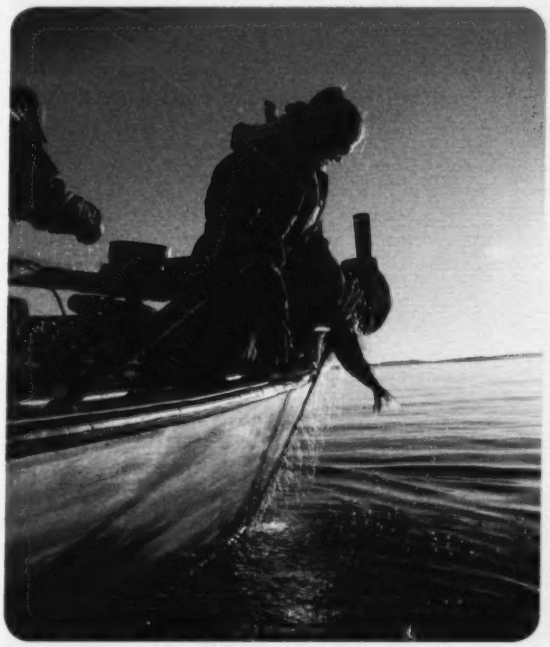
The Advisory Council for FMZ 9 provides an effective mechanism for the public to become engaged in the management and stewardship of the fishery in Lake Superior and its neighbouring FMZs 6, 7 and 10. FW SPA funding enabled the FMZ 9 Council to meet on two occasions in 2014 to discuss a number of proposals including the use of two lines per angler in Lake Superior; developing a public education campaign to promote proper catch and release fishing techniques in keeping with Ontario's *Provincial Fish Strategy – Fish for the Future*; and, monitoring the Rainbow Trout fishery in Portage Creek – the longest running Rainbow Trout data set on Lake Superior.

Black Bay Fall Walleye Index Netting (FWIN)

With FW SPA funding in 2014, the MNRF conducted the sixth FWIN survey on Black Bay since 2002 and the third consecutive survey since 2012. A total of 1,770 fish from 18 different species were caught, of which 1,131 fish were biologically sampled. Walleye catches in the 2014 survey were slightly lower than in 2013. This information is added to our long-term trend through time data series and is used for managing Walleye recovery in Black Bay.

Commercial Catch Sampling

FW SPA funding enables assessment staff to sample the commercial catch on a year round basis. There were 2,638 samples of commercially caught Lake Whitefish and Lake Trout collected and 1,389 samples of Cisco collected during the fall roe fishery in 2014.



(Left) Rainbow Trout
(Top) Walleye from FWIN net in Black Bay
(Right) Commercial catch of Lake Whitefish from Lake Superior

Lake Huron

Lake Huron includes the main basin, Georgian Bay and the North Channel which are three vastly different and complex lake basins. FW SPA support is vital to the management of Lake Huron fisheries. With a goal of self-sustaining Lake Trout populations in Lake Huron, the Lake Huron Lake Trout Rehabilitation Plan continued its implementation with the help of FW SPA funding. 2014 achievements include 1.9 million Lake Trout stocked into Lake Huron and continued Lake Trout assessment in the Parry Sound area of eastern Georgian Bay where 99 sites were assessed and 619 Lake Trout sampled. Lake Trout numbers continue to increase throughout Lake Huron offering benefits to the entire lake ecosystem.

Lake Huron's commercial fishing industry is supported by over 40 licenced fishers who are spread throughout the lake. FW SPA funding supports the Lake Huron Commercial Catch sampling program which enables MNRF fisheries technicians to record biological attributes of commercially caught species. In 2014 Lake Huron MNRF staff sampled over 8,300 fish of 13 different species. This data is crucial in assessing the status of stocks of these commercially caught fish species, and setting annual quotas for commercial fishers.

Lake Huron's offshore index netting program provides long term trend data of various fish populations throughout Lake Huron. 2014 was the 36th consecutive year for the offshore index netting program and 123 nets were set in 5 locations around Lake Huron. There were 4,014 fish sampled of 23 different species. This program is supported mostly by FW SPA funding and provides valuable information on recovering species such as Lake Trout, important recreational species such as walleye, species at risk such as Lake Sturgeon and commercially important species such as Lake Whitefish.

As Ontario's most popular sport fish, the importance of Walleye to Lake Huron's recreational and commercial fishers and First Nation communities has increased in recent years. With partial funding from the FW SPA, the MNRF has embarked on development of a Walleye management plan for the Ontario waters of Lake Huron. A technical report was completed in 2014 as a precursor to the plan and comprehensive walleye assessments in two locations on eastern Georgian Bay, perhaps the most important Walleye fishery in Lake Huron.

(Top) Lake Trout sampling in Parry Sound
(Bottom) Juvenile Lake Sturgeon captured during the Offshore Index Netting Program

Wolf and Coyote Research

MNRF is investigating the complex relationship between wolves and coyotes in Ontario. For example, Eastern Wolves (*Canis lycaon*) are listed as a species at risk, both provincially and federally. Although once widely distributed across the deciduous forests of eastern North America, Eastern Wolves are presently limited primarily to Algonquin Provincial Park and the surrounding townships where they are protected from hunting and trapping.

Research conducted by the MNRF over the past decade has identified few Eastern Wolves outside of Algonquin and indicates that most Eastern Wolves outside of the park are likely emigrants from Algonquin. These animals survive poorly relative to other wolves and Eastern Coyotes and often interbreed with the more plentiful coyotes that now occupy all of the Eastern Wolf's historical range.

MNRF's present Eastern Wolf research program is aimed at better understanding the current distribution of Eastern Wolves. The program explores the potential effectiveness and feasibility of different management strategies at increasing both the number and distribution of Eastern Wolves. Specifically, MNRF is doing this by looking at the fine-scale movements and survivorship of Eastern Wolves and Coyotes in both protected and unprotected landscapes to gain a better understanding of why coyotes thrive in landscapes where wolves seem unable to persist, and also how each species responds to different landscape features including those occupied or altered by humans.

MNRF is also investigating the respective roles of wolves versus coyotes as predators of deer, moose and beaver across these different landscape types. Further south, MNRF is also engaged in research aimed at preventing conflict between coyotes and farmers in rural settings and the public at large in more urbanized settings.

Zery Atas Lloyd

(Top) Eastern Coyote in winter
(Bottom) Eastern Wolf in fall

Ontario's Invading Species Awareness Program

ONTARIO'S INVADING SPECIES AWARENESS PROGRAM

In 1992, the MNRF partnered with the Ontario Federation of Anglers and Hunters (OFAH), to establish the Invading Species Awareness Program (ISAP) to address the increasing threats posed by invasive species in Ontario. The program has expanded considerably since that time as new invasive species and new pathways have emerged. The key objectives of the program are to generate awareness of aquatic and terrestrial invasive species, address key pathways contributing to introductions/spread, and facilitate monitoring and tracking initiatives for the spread of new invaders found within Ontario.

The ISAP supports the goals and objectives of the Ontario Invasive Species Strategic Plan through strategic initiatives that facilitate prevention, detection, response, and management.

PREVENTION:

- Utilize education and outreach to prevent the introduction/spread of invasive species through multiple pathways, including recreational watercraft, use of live bait, angling and hunting, live food fish, and the horticulture/pet industries.
- Distribute over 500,000 pieces of educational material for targeted pathways and species annually.
- Annually engage community groups and agencies in outreach and stewardship activities.
- Develop and maintain http://www.invadingspecies.com/ as the primary website for invasive species information.
- Provide training for technical professionals on invasive species identification and reporting.
- Hired 26 summer staff to deliver community-based outreach, monitoring and control initiatives across the province.
- Participated in over 250 provincial and regionally based events and workshops in 2014.

DETECTION:

- Facilitate early detection and rapid response through the coordination and delivery of provincial monitoring and tracking systems.
- Deliver the Invading Species Hotline (1-800-563-7711), a toll free line where the public can report sightings of invasive species or speak with biologists to get the latest information on invasive species issues.
- The ISAP has recently developed a web-based mapping system and affiliated mobile app for documenting the distribution of invasive species in Ontario called EDDMapS. The system currently contains over 2.6 million invasive species records from across North America.

RESPONSE:

- Assist the province in efforts to respond to emerging threats (e.g., water soldier in the Trent Severn Waterway).

MANAGEMENT:

- OFAH staff provide the public with tools and information to take action to control invasive species.

Ontario's Moose Project

The MNRF is accountable for the sustainable management of moose populations in Ontario. Moose hold great ecological, socio-economic, recreational and cultural importance to Ontarians including a variety of stakeholders, tourist outfitters, Indigenous people and communities.

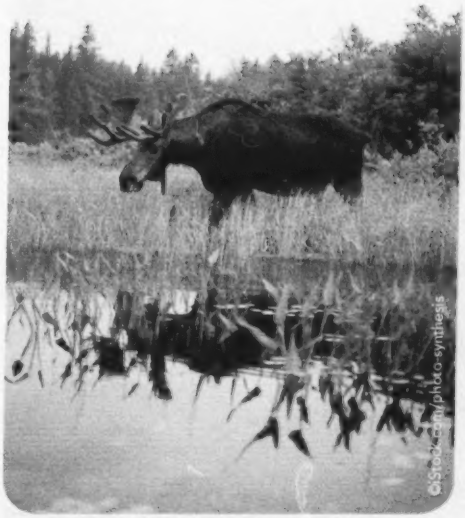
The MNRF tracks moose population trends through aerial inventory survey results, hunter success rates, hunter observations and estimated trends in other factors, such as winter ticks and brain worm. Moose face varying degrees of pressure from a number of factors in Ontario's complex ecosystem, including parasites, changing climate and habitat, hunting and predators. Recent moose population survey results suggest moose numbers are decreasing in parts of the province. Minnesota and Manitoba have also seen significant drops in moose numbers in recent years.

Ontario's Moose Project is exploring ways to reduce the pressure on moose to sustain and grow Ontario's moose population.

In phase 1 of the project, MNRF engaged hunters, stakeholders, tourist outfitters, Aboriginal groups and communities, and the general public asking them to share their interests and concerns regarding moose. These insights informed the development of actions intended to minimize the impact on resident hunters and tourist outfitters to the extent possible, while pursuing necessary reductions in moose harvest. In 2015 the hunting season for moose calves in Northern Ontario has been shortened to two weeks, and the start of the 2016 moose season will be delayed by one week across much of Northern Ontario.

Outreach undertaken during phase 1 of the Moose Project also provided insights that are helping to refine a number of possible actions that will be further examined and discussed as part of phase 2 outreach. During phase 2, MNRF is proposing:

- additional actions to address the broader range of factors affecting moose, including parasites, changing climate and habitat, hunting, and predators
- desired moose population numbers in Ontario
- ways the public can be involved and provide their input



(Top) Grazing moose
(Bottom) Cow and calf moose

Fish and Wildlife Additional Internet Resources

The 2014-15 FW SPA Annual Report provides information regarding how fishing and hunting licence fees are used. The following references highlight some of the additional fish and wildlife information that is available on the internet:

REPORTS AND ACT

- Historical Fish and Wildlife Special Purpose Account annual reports
  www.Ontario.ca search "how fishing and hunting fees are used"
- Sustainability Strategy for the FW SPA
  www.ebr.on.ca search "Sustainability Strategy for the Fish and Wildlife Special Purpose Account"
- Fish and Wildlife Conservation Act
  http://www.ontario.ca/laws search "Fish and Wildlife Conservation Act"

FISHERIES MANAGEMENT INFORMATION

www.Ontario.ca/fishing

- Fishing Regulation Summary
- Outdoors Cards & licences
- Zone maps
- Fish ON-Line
- Eating Ontario Fish

www.Ontario.ca/page/ontarios-fish-stocking-program

- How to find a stocked lake
- Stocking Strategy
- Visit a fish culture station

Other fisheries management resources

- Learn to Fish – *www.ontario.ca/learntofish*
- 2014 Annual Report of the Lake Ontario Management Unit *http://www.glfc.org/lakecom/loc/mgmt_unit/index.html*
- Ontario's Great Lakes Strategy *http://www.ontario.ca/document/ontarios-great-lakes-strategy*

www.Ontario.ca search "fisheries in Ontario"

- Provincial fish strategy
- Recreational fishing including Fisheries Management Zones (FMZ's)
- Commercial Bait
- Commercial Fishing
- Aquaculture

WILDLIFE MANAGEMENT INFORMATION

www.Ontario.ca search "Wildlife"

- Biodiversity
- Laws for wildlife protection
- Moose
- Black Bear
- White Tailed Deer
- Elk
- Small game
- Wolf/coyote
- Other species

www.Ontario.ca/hunting

- Outdoors Cards & licences
- Hunting Regulation summary
- Harvest results
- Hunter Education
- Wildlife Management Unit Maps

INVASIVE SPECIES

http://www.invadingspecies.com